

# PROGRESS OF MEDICAL SCIENCE.

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## MEDICINE.

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UNDER THE CHARGE OF

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**Heart Affections in Scarlet Fever.**—SCHMOLTZ (*Münchener med. Wochenschrift*, 1904, li. p. 1417) states while the cardiac lesions in diphtheria have been carefully studied, those occurring during and after scarlet fever have been more or less overlooked, owing probably to the infrequency of such serious and tragical results as follow diphtheria. In a study of 191 cases of scarlet fever, Schmoltz, of Dresden, found that about 35 per cent. showed signs of some circulatory disturbance. In the beginning of the attack the pulse is always rapid. This does not indicate any cardiac derangement. Indeed, later evidence of cardiac lesion is about as likely to appear in cases which at this period show a slow pulse as in those cases with marked acceleration. Of greater importance is the rate of the pulse at subsequent periods. When the temperature falls the pulse, as a rule, returns to the normal rate, but variations are observed. In some cases the rate becomes much diminished, while the temperature is still elevated. Pulses of from 55 to 58 beats a minute are not uncommon, and occasionally the pulse rate falls suddenly to from 20 to 40 beats, so that one may speak of a pulse crisis. This crisis may occur several days after the temperature has reached the normal point; in other cases it falls more gradually. Especially notable at this stage is the instability of the heart's action; daily variations of 20 and more beats may occur. In other cases the pulse rate remains high after the temperature has become normal. Such irregularities may be transient, no further symptoms of circulatory derangement following, but when marked they are usually the precursors of more serious manifestations. The pulse after dropping to normal with the temperature may remain there for several days and then suddenly rise to 130 or more, persisting at this rate with wide daily variations for several weeks. This rise, in what Schmoltz terms the tertiary period, always indicates some cardiac lesion.

During the early stages of the disease the first heart sounds often show some impurity or a systolic murmur, which commonly vanishes in a few days, but in some cases becomes more marked as the temperature falls, while other symptoms arise which leave no doubt as to the presence of a heart lesion. More often murmur develops at the end of the first or during the second stage; not infrequently they appear later. Their character is various, at times blowing, at times harsh and humming; no diagnostic importance can be attached to these differences. They are almost always systolic in time, sometimes louder at the apex, sometimes at the base. Such murmurs are usually accompanied by an accentuated second pulmonic sound. The second pulmonic may be accentuated before the development of a murmur or without a murmur; in these cases it is frequently associated with an irregular or a rapid pulse. Such changes may be present with no alteration in the area of cardiac dullness or in the position of the apex beat, but frequently there is enlargement to the left and often also to the right and upward, while the point of maximum impulse moves outward. In 14 per cent. of his cases Schmoltz observed an increase in the area of dullness; in some of these no murmur developed. It is important to note that such dilatation may be deferred to the period of convalescence, when it may follow suddenly some unusual exertion. Schmoltz finds that dilatation sets in most frequently toward the end of or after the febrile period, sometimes after a considerable length of time. While irregularity of the pulse is usual in these cases, it may be absent, as in diphtheria, even in cases with most marked dilatation.

Practically no subjective symptoms accompany these lesions as long as the child remains in bed, though there may be palpitation and a little dyspnoea. The temperature remains normal or is but slightly elevated. Cardiac complications are not much more frequent after the severer attacks of scarlet fever with marked involvement of the throat than after milder cases, and some of the gravest cardiac lesions follow very mild attacks, with uncomplicated convalescence. As rheumatoid pains are very common in scarlet fever, Heubner has referred both joint and heart lesions to a rheumatic infection. Schmoltz, on the other hand, finds that cardiac lesions are no more frequent among the cases with arthritic pain than in instances without these symptoms. He believes the two complications bear no further relation to one another than that of having a common cause. Hearts damaged before the onset of the infection bear the brunt of the attack well. Of 27 cases showing, on admission, a slight mitral insufficiency, 17 passed through the illness without apparent damage to the heart; in 5 cases there was transient arrhythmia or an unusually rapid pulse in the latter part of the disease; in 3 slight dilatation was made out.

The ultimate outcome of cases with these cardiac manifestations varies. In a large proportion all the symptoms disappear. In 29 cases of this series, however, changes persisted on discharge. In 19 of these cases and 5 more which, on discharge, showed no abnormalities, he was able to observe subsequently. In 18 abnormal cardiac conditions were found. In 16 signs of a definite mitral insufficiency, systolic murmur, accentuated second pulmonic, and in some fairly well-marked cardiac enlargement. In the other 2 cases a systolic murmur alone was found. In 6 cases the heart seemed normal. Of the 18 affected, 5 had become worse after discharge. These displayed during their illness some circu-

latory disturbance, but on discharge were quite free from unusual signs. Three cases had improved after discharge, the symptoms then present having cleared up. Of the 16 cases with persisting cardiac lesions in 13 over six months had elapsed since the attack, in 4 one year, and in 2 over five years.

These heart affections were formerly all referred to an endocarditis, but since Romberg's paper the importance of the myocardial changes has been more generally recognized. Endocarditis is a very rare incident in scarlet fever. In a review of 30 autopsies the author could find only 3 showing slight changes in the valves. Myocarditis is, on the other hand, very common, and there can be little doubt that most of the symptoms are referable to this lesion. Why the signs of a mitral insufficiency should so frequently persist may be variously explained. It is now well known that a relative insufficiency, lasting indefinitely, may depend upon changes in the heart muscle.

The heart in scarlet fever should be carefully watched, not only during the disease, but also in convalescence. Grave results may follow too early strain. When cardiac complications arise, the one important point in treatment is to insist upon prolonged rest in bed.

**Diseases Due to Trypanosomes.**—ROBERT KOCH (*Deutsche med. Wochenschrift*, 1904, xxx. p., 1705) states that since the discovery of the malarial parasite by Laveran and pyrosoma bigeminum by Theobald Smith, recognition of the importance of the protozoa has spread rapidly. The appreciation of the importance of the one especially interesting group of parasites, the trypanosomes, which were shown by Bruce in 1895 to be the cause of the tsetse disease in animals, is a result of investigations of the past few years. The trypanosomes belong to the group of flagellates, and in fresh blood preparations move about with great activity. They are two or three times longer than a red corpuscle, have a long flagellum on the fore end, and are surrounded by a loose, undulating membrane. Stained by the Romanowsky method, they show a large red nucleus and an intensely red centrosome situated near the hinder end, from which a red line runs along the undulating membrane, ending in the red tail. The body is blue and without pigment.

Trypanosome infections have many features in common with malaria. They may run an acute course, but are more usually chronic and sometimes drawn out for years; they cause irregular fever, often with longer or shorter remissions, anæmia, emaciation, loss of strength, localized cedema, enlargement of lymph glands and spleen.

The best known of these infections is the tsetse disease, due to trypanosoma Brucei, and transmitted by the bite of glossina morsitans, the tsetse fly. The disease was first observed in the valleys of the Limpopo and Zambezi, but is now known to extend on the east coast of Africa from Natal to Somaliland and on the west coast up to Senegal, through the Congo basin about Lake Tchad, and upward to Southern Algeria. Nearly all domestic animals are susceptible; the organism is very pathogenic for laboratory animals.

Similar to tsetse disease is surra and the mal de Caderas. Surra is a disease affecting horses and camels in Asia; in some regions it attacks the cattle. It extends from Persia to Indo-China, and in recent years has been conveyed to the Philippines, to Java, to Mauritius, and to